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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/164,898 10/01/98 AKIYAMA J 42390.P3373

LMC1/0621

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EXAMINER

VITAL, P

ART UNIT

PAPER NUMBER

2752

DATE MAILED:

06/21/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/164,898

Applicant(s)

Aklyama, James

Examiner

Pierre Vital

Group Art Unit

2752

☒ Responsive to communication(s) filed on Oct 1, 1998

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle* 935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 1-15 is/are pending in the applicat

Of the above, claim(s) 4-6 is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-3 and 7-15 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☒ Claims 1-15 are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☒ The drawing(s) filed on Oct 1, 1998 is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☒ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

Art Unit: 2752

DETAILED ACTION

Election/Restriction

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-3, 7-15, drawn to a striping controller causing data to be written or read in an interleaved form and substantially in parallel from a first or second disk drives.
 - II. Claims 4-6, drawn to a method of writing data onto two disk drives connected to a host computer, said method using a right shifted least significant bit to select between a first and a second physical drive.
2. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because access to the disk drives can be made in a interleaved or parallel form without right shifting a bit. The subcombination has separate utility such as right shifting a least significant bit to select between a first and a second physical drive.

Art Unit: 2752

3. Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Group II, restriction for examination purposes as indicated is proper.
4. During a telephone conversation with James H. Salter (Reg. No. 35,668) on June 13, 2000 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-3, 7-15. Affirmation of this election must be made by applicant in replying to this Office action. Claims 4-6 are withdrawn from further consideration by the examiner, 37 CAR 1.142(b), as being drawn to a non-elected invention.

Drawings

5. The drawings are objected to as failing to comply with 37 CAR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "7a and 7b" in Fig. 1. Correction is required.
6. The drawings are objected to as failing to comply with 37 CAR 1.84(p)(4) because reference character "36" in Fig. 2 has been used to designate both "the IDE Electronics in drive 30" and "the disk assembly in drive 34". Correction is required.
7. The drawings are objected to because in Fig. 2, Ref. 36 of IDE drive 34; Fig. 5, Ref. 38 are shown as empty box. Correction is required.

Art Unit: 2752

Specification

8. The disclosure is objected to because of the following informalities: In line 8 of the Summary and Abstract, replace "dries" with --drives-- .

On page 10, addresses "600001, 60000 and 600060" are not shown on Fig. 7.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1, 8-11 and 15 are rejected under 35 U.S.C. 112, second paragraph, as being vague and indefinite for the phrase "adapted to" does not clearly set forth applicant's invention. It has been held that the recitation that an element is "adapted to" perform a function is not a positive limitation but only requires the ability to so perform that function. It does not constitute a limitation in any patentable sense. *In re Hutchison*, 69 USPQ 138.

Art Unit: 2752

Claim Rejections - 35 USC § 102

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

12. Claims 1, 2, 7-9, 11-13, and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Anderson (US5,905,910).

As per claims 1, 7, 8, 11, 12 and 15, Anderson teaches a system for multi-threaded disk drive interrupt processing wherein the first and second disk drives 110 and 112 may be integrated device electronics (IDE) disk drives wherein the disk drive itself contains many of the required interface components; with IDE disk drives, a single interface coupled to the bus system 108 is capable of operating multiple IDE disk drives [Col.5, lines 28-33]; it is the instructions in the BIOS 106 itself that controls the positioning of the read/write head in the first disk drive 110 and the second disk drive 112 [Col.8, lines 12-15]; in the disk striping embodiment of the system 100, a data file is apportioned into blocks that are alternately stored (interleaved) on the first drive 110 and the second drive 112; the system 100 advantageously allows the BIOS 106 to issue commands to both the first disk drive 110 and the second disk drive 112 to allow each of the first and second disk drives to simultaneously (parallel) perform the consuming task of positioning the read/write head at the proper location on the disk drive [Col.8, lines 62-67; Col.9, lines 1-3]; with

Art Unit: 2752

respect to the disk striping aspect of the system 100, the operating system behaves as if there is a single disk drive (single physical drive) rather than the first disk drive 110 and the second disk drive 112 [Col.7, lines 60-63].

As per claims 2, 9 and 13, Anderson teaches this process is repeated with data transfers alternating between the first disk drive 110 and the second disk drive 112 [Col.12, lines 18-20].

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 3, 10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Anderson (US5,905,910) and Jenkins (US4,047,157).

As per claims 3, 10 and 14, Anderson teaches the BIOS 106 contains instructions, which the CPU 102 executes, to transfer data or commands to the internal registers of the first disk drive 110; for example, the disk transfer command to the first disk drive 110 will include data such as the physical location on the first disk drive from which the data file will be read (system request); the BIOS 106 also contains instructions to issue commands to the second disk drive 112 in preparation for a data transfer with the second disk drive [Col.8, lines 54-61]. However,

Art Unit: 2752

Anderson fails to specifically teach that the system request includes a sector bit string, a head bit string, a track bit string and a driver bit as recited in the claims.

Jenkins teaches a controller for use in a data processing system wherein in the track/sector register 146 Track Address and Sector Address bit positions identify, respectively, the track and sector on a disk to be involved in a transfer; in a fixed-head unit, the Track Address bits identify a specific head [Col.20, lines 38-42]; a Write signal, produced in response to the function bits, enables drivers 297 to load data onto the data set 101 [Col.26, lines 26-28].

It would have been obvious to one of ordinary skill in the art, having the teachings of Anderson and Jenkins before him at the time the invention was made, to modify the system taught by Anderson to include sector bit string, head bit string, track bit string and driver bit in the system request because it would have improved processing speeds and memory access times by providing the system identification information for the physical location on the drive from which the data file will be read or written as taught by Jenkins.

Conclusion

15. The prior art made of record on form PTO-892 and not relied upon is considered pertinent to applicant's disclosure. Applicant is required under 37 C.F.R. § 1.111(c) to consider these references fully when responding to this action. The documents cited therein teach striping controller, interleaved and parallel access and subdividing drives into sequential blocks.

Art Unit: 2752

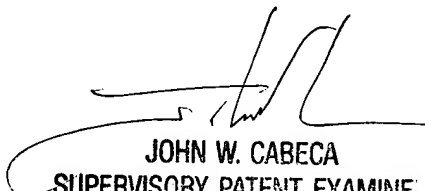
16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pierre M. Vital whose telephone number is (703) 306-5839. The examiner can normally be reached on Monday to Friday from 8:30 A.M. to 5:00 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John W. Cabeca, can be reached on (703) 308-3116. The fax phone number for the organization where this application or proceeding is assigned is (703) 305-9731.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

JWC/pmv

June 13, 2000



JOHN W. CABECA
SUPERVISORY PATENT EXAMINER
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